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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,404	10/24/2005	Shohichi Nitta	R2184.0470/P470	4485
24998	7590	06/29/2007	EXAMINER	
DICKSTEIN SHAPIRO LLP			LAXTON, GARY L	
1825 EYE STREET NW			ART UNIT	
Washington, DC 20006-5403			PAPER NUMBER	
			2838	
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			06/29/2007	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/554,404	Applicant(s) NITTA ET AL.	
	Examiner Gary L. Laxton	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,6,7 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 8-11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/30/06</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Inventorship

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6, 7 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yasuda et al. (US 5,914,591 – supplied by applicant).

Yasuda et al. disclose a step-up/down DC-DC converter, comprising: a voltage step-up/down part (Q1, Q2, D1, D1 etc); and a control part configured to generate an error signal (2) indicating an error between a voltage value obtained by dividing the output voltage (R1, R2) and a predetermined reference voltage (3), compare (6, 7) the error signal and first and second triangle wave signals (S2, S1), and cause the voltage step-up/down part to perform a step-up or step-down operation based on a result of the comparison, wherein the control part includes: a first triangle wave generator circuit (8, 9) configured to generate the first triangle wave signal compared with the error signal to determine whether to cause the voltage step-up/down part to perform the step-down operation; and a second triangle wave generator circuit (8, 9) configured to generate the second triangle wave signal compared with the error signal to determine whether to cause the voltage step-up/down part to perform the step-up operation, the first triangle wave generator circuit being configured to generate a clock signal synchronized with the generated first triangle wave signal (figs. 4 and 5), and output the generated clock signal to the second triangle wave generator circuit, the second triangle wave generator circuit being configured to generate the second triangle wave signal synchronized with the first triangle wave signal based on the input clock signal, and output the second triangle wave signal.

Allowable Subject Matter

5. Claims 2-5 and 8-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or suggest, inter alia, a control part further comprises: a first voltage generator circuit configured to generate a first voltage for setting a lower limit voltage of the first triangle wave signal; a second voltage generator circuit configured to generate a second voltage for setting an upper limit voltage of the first triangle wave signal; a third voltage generator circuit configured to generate a third voltage for setting an upper limit voltage of the second triangle wave signal; and a current generator circuit configured to generate and output a current setting a slope of voltage variation of each of the first and second triangle wave signals, the first triangle wave generator circuit being configured to generate the first triangle wave signal from the first and second voltages and the current output from the current generator circuit, the second triangle wave generator circuit being configured to generate the second triangle wave signal from the third voltage, the current output from the current generator circuit, and the clock signal output from the first triangle wave generator circuit.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 7,202,644 Nitta et al. disclose a DC converter apparatus; US 6,166,527 Dwelley disclose a step up step down converter with control circuit.

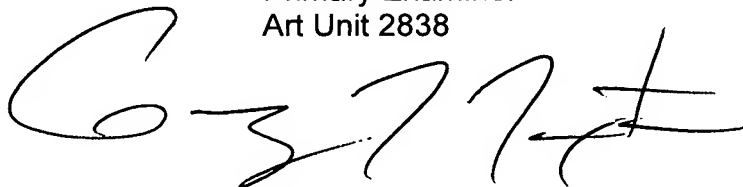
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on (571) 272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gary L. Laxton
Primary Examiner
Art Unit 2838

6/24/2007

A handwritten signature in black ink, appearing to read 'G-L Laxton', is written over the printed name and title of the examiner.